Pilipinas Shell Petroleum Corporation

Safety Data Sheet

Issued: Oct 22, 1999

SDS No. BIT - PEN - 002

Bitumen 85-100

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name: Shell Bitumen 85 -100

Product code: 30000217 Bulk

40000605 Drum x 200 kg

40000606 Drum x 150 kg

Product type: Penetration Grade Bitumen / Asphalt Cement

Supplier: Pilipinas Shell Petroleum Corporation

Address: 156 Valero Street, Salcedo Village 1227, City of Makati
P.O. Box 1174 MCC 1251, City of Makati, Philippines

Contact numbers:

Telephone: (632) 816-6501
Fax: (632) 816-6565

Emergency telephone number:

816-6501

2. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation description: Asphalt Cement - complex combinations of highly molecular weight organic compounds, mainly hydrocarbons, which are obtained by blowing air through heated residue from the refining o petroleum crude oils.

Dangerous components/constituents: The composition of this product are not classified as hazardous under EC criteria.

3. HAZARDS IDENTIFICATION

Human health hazards: Molten product adheres to the skin and causes burns.

Hydrogen sulfide may accumulate in the head space of containers.

Prolonged exposure to vapour concentrations above the recommended exposure standard may cause irritation of the skin, eyes and upper respiratory tract.

Safety hazards: Not classified as flammable but will burn.

Release of flammable vapours is possible on hot storage.

Contact of hot bitumens with water leads to violent expansion and high potential for “boil-over”.

Environmental hazards: Not classified as dangerous under EC criteria.

4. FIRST AID MEASURES

Symptoms and effects: Skin burns.

Prolonged exposure to vapor concentrations above the recommended occupational exposure standard may cause irritation of the skin, eyes and upper respiratory tract.

Unconsciousness as a result of exposure to hydrogen sulfide may occur extremely rapidly and without other symptoms.

Protection of first aiders: Wear self-contained breathing apparatus if presence of hydrogen sulphide is suspected.

First Aid - Inhalation: Remove to fresh air.
If breathing has stopped apply artificial respiration.
If breathing but unconscious place in the recovery position.
If heartbeat absent give external cardiac compression.
If symptoms persist, obtain medical attention.

First Aid - Skin: Molten material on the skin should be cooled rapidly with cold water, but not pulled off.

In case of a circumferential burn with adhesion of the bitumen, the adhering material should be split to prevent a tourniquet effect as the bitumen cools.

Contaminated clothing must be removed as soon as possible. It must be relaundered before reuse.

First Aid - Eye: Rinse immediately with plenty of water for at least 10 minutes and seek medical advice.

First Aid - Ingestion: Do not induce vomiting.
Give water to drink provided patient is conscious.
Protect the airway if vomiting begins.
If rapid recovery does not occur, obtain medical attention.

Advice to physicians: Treat symptomatically.

In the case of burns no attempt should be made to remove firmly adherent bitumen from the skin, it will provide a sterile dressing and detach itself after a few days.

When it is necessary to remove adhering bitumen from the skin liberal amounts of warm medicinal paraffin can be used.

Prolonged exposure to high concentrations of hydrogen sulfide may lead to a delayed chemical pneumonitis (lung oedema).

5. FIRE FIGHTING MEASURES

Specific hazards: Combustion is likely to give rise to a complex mixture of gases and airborne particulates, including carbon monoxide, oxides of sulphur, and unidentified organic and inorganic compounds.

Extinguishing media: Foam, carbon dioxide, dry chemical extinguishers.

Extinguishing media - small fires:	Sand or earth may be used.
Unsuitable extinguishing media:	Water in a jet. Use of Halon extinguishers should be avoided for environmental reasons.
Protective equipment:	Compressed air breathing apparatus must be worn when entering confined fire space.
Other information:	Hot bitumen can cause violent eruptions in contact with water, and may splatter hot material. Exposed containers, structures and equipment adjacent to fire should be cooled with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Do not allow hot material to contact water or other liquids. Evacuate the area of all non-essential personnel. Remove all possible sources of ignition in the surrounding area. Do not breathe vapour and mists. Shut off leaks if possible without personal risk.
Personal protection:	Wear protective clothing specified for normal operations.
Clean-up methods - small spillage:	Absorb or contain the spillage with sand or earth. Shovel up and place in a labelled sealable container for subsequent safe disposal. Do not disperse using water.
Clean-up methods - large spillage:	Transfer to a labelled, sealable container for product recovery or safe disposal. Otherwise treat as for small spillage.

7. HANDLING AND STORAGE

Handling:	Avoid contact with heated or molten product. Avoid breathing fumes or vapours from heated product. Do not breath fumes which may accumulate in the vapour head-space of containers. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. When using do not eat, drink or smoke.
Handling temperature:	200 ºC Maximum
Storage:	Tanks must be specifically designed for use with this product. Tanks should be provided with a heating facility. Ensure heating coils are always well covered with product (minimum 15 cm). Tanks should be lagged to prevent heat loss. Prevent ingress of water. Carbonaceous deposits, which can be pyrophoric, occur on the roofs and walls of heated bitumen tanks. Use lowest practicable storage temperatures and avoid through-draughts of air to minimize risk of generating a flammable condition in the tank space.
Recommended materials:	Normally use mild steel for containers.
Unsuitable materials:	Plastic containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering control measures: Ensure thorough ventilation of the area. Use flame proof mechanical blowers if possible.

Occupational exposure standards:

Component name	Limit type	Value	Unit	Other information
Bitumen Fume	TWA	5	mg/m^3	Ref: ACGIH
H2S	TWA	14	mg/m^3	Ref: ACGIH
H2S	STEL	21	mg/m^3	Ref: ACGIH

Respiratory protection: Not normally required.

In a confined space self-contained breathing apparatus may be required.

Hand protection: Heat resistant gloves, close fitting at wrist.

Eye protection: Monogoggles or full-face shield.

Body protection: Safety shoes or boots.

Cotton overalls close fitting at neck and wrist.

If splashes of hot product are likely to occur, use helmet with neck cloth and full-face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid

Colour: Black

Odour: Characteristic

Density: 1 to 1.1 kg/litre

Softening Point: 45 to 52 ºC

Penetration: 85 to 100 dmm.

Flash Point: > 232 ºC

Ductility : 100 cm. min. @ 25 ºC

Solubility in Water: negligible

Solubility in other Solvents: > 99% in Trichloroethylene

10. STABILITY/REACTIVITY

Stability: Stable

Conditions to avoid: Temperatures above 200 ºC.

Hazardous decomposition products: None expected under normal use conditions.

11. TOXICOLOGICAL INFORMATION

Basis for assessment: Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the toxicology of similar products.

Acute toxicity - oral:	LD_{50} > 2000 mg/kg
Acute toxicity - dermal:	LD_{50} > 2000 mg/kg
Acute toxicity - inhalation:	Not considered to be an inhalation hazard under normal conditions of use.
Eye irritation:	Vapours from hot product expected to be slightly irritant.
Skin irritation:	Condensed vapours expected to be slightly irritant.
Skin sensitisation:	Not expected to be a skin sensitizer.
(Sub) chronic toxicity:	No effects found.
Carcinogenicity:	There is no evidence that undiluted bitumens are carcinogenic, but there is evidence from animal skin painting studies that some bitumens when diluted with solvents may be weakly carcinogenic.
Mutagenicity:	Not considered to be a mutagenic hazard.
Reproductive toxicity:	Does not impair fertility. Not a developmental toxicant.
Human effects:	There is no evidence that exposure to bitumen or its fumes causes cancer in man. If vapours are inhaled slight irritation of the respiratory tract may occur.

12. ECOLOGICAL INFORMATION

Mobility:	Solid under most environmental conditions.
Persistence/degradability:	Not inherently biodegradable.
Bioaccumulation:	Unlikely, due to low solubility in water.
Ecotoxicity:	Poorly soluble mixture. Practically non-toxic, LC/EC50 > 100 mg/l, to aquatic organisms (estimated) (LC/EC50 expressed as the nominal amount of product required to prepare aqueous test extract).
Sewage treatment:	Practically non-toxic, EC50 > 100 mg/l, to organisms in sewage treatment plants. (EC50 expressed as the nominal amount of product required to prepare aqueous test extract).

13. DISPOSAL CONSIDERATIONS

Precautions:	See Section 8.
Waste disposal:	Allow to cool and solidify. Waste arising from spillage or tank cleaning operation should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Waste product should not be allowed to contaminate the soil.

14. TRANSPORT INFORMATION

Proper Shipping Name:	Elevated Temperature Liquid, N.O.S., at above 100 ºC and below its flashpoint.
UN Number:	3257
IMDG :	9
Page :	9027-1
IMO Marine Pollutant:	No

15. REGULATORY INFORMATION

Not Hazardous under PPA regulations, i.e. **NOT CLASSIFIED**

16. OTHER INFORMATION

Uses and restrictions:	Shell Bitumen 85 - 100 are used in road pavement construction. This product must not be used in applications other than the above without first seeking the advise of the supplier.
Technical contact point:	(632) 563-8561
Technical contact number:	
Telephone:	(632) 563-8561
Fax:	(632) 564-6844